

## CLAIMS

1. (original) A method for extracting speech recognition features from a speech signal coded as a bitstream, comprising:
  - decoding the bitstream to recover linear predictive coding filter parameters;
  - decoding the bitstream to recover a residual signal; and
  - discriminatively combining the linear predictive coding filter parameters and the residual signal into speech recognition features.
2. (original) The method of claim 1 further comprising:
  - up-sampling the linear predictive coding parameters; and
  - interpolating the up-sampled linear predictive coding parameters.
3. (original) The method of claim 2 wherein a set of samples is obtained for every frame of the bitstream.
4. (original) The method of claim 2 further comprising:
  - deriving cepstral vectors from the up-sampled LPC filter parameters.
5. (original) The method of claim 1 further comprising:
  - setting short-term prediction coefficients to zero; and
  - decoding the bitstream to obtain the residual signal.
6. (original) The method of claim 1 further comprising:
  - analyzing an entire spectrum of the residual signal.

7. (currently amended) The method of claim 1 further comprising:

deriving ~~derive~~ a high-dimensional log spectra from the residual signal for each set of up-sampled LPC filter parameters.

8. (original) The method of claim 1 further comprising:

deriving a cepstral vector corresponding to each set of linear predictive of each frame;

deriving a high-dimensional log spectra from the residual signal for each frame;

concatenating the cepstral vector with each corresponding high-dimensional log spectra for each frame to generated an extended vector.

9. (original) The method of claim 8 further comprising:

reducing a dimensionality of the extended vector using linear discriminant analysis.

10. (original) The method of claim 8 further comprising:

reducing a dimensionality of the extended vector using discriminant neural network.

11. (original) The method of claim 1 wherein the speech recognition features are extracted from a bitstream in a server executing a speech recognizer.